DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

| Lake: ROCK POND | Lake Area (ha): | 14.00 |
|----------------------------|------------------------------------|---------|
| Town: WINDHAM | Maximum depth (m): | 8.2 |
| County: Rockingham | Mean dept <u>h</u> (m): | 3.0 |
| River Basin: Merrimack | Volume (m³): | 418500 |
| Latitude: 42°46′N | Relative depth: | 1.9 |
| Longitude: 71°18′ W | Shore configuration: | 1.36 |
| Elevation (ft): 153 | Areal water load (m/yr) | : 7.60 |
| Shore length (m): 1800 | Flushing rate (yr ⁻¹): | 2.50 |
| Watershed area (ha): 172.0 | P retention coeff.: | 0.59 |
| % watershed ponded: 0.0 | Lake type: | natural |

| L | | | |
|------------------------------------|---------------------|----------------|--|
| BIOLOGICAL: | 24 February 1988 | 18 August 1987 | |
| DOM. PHYTOPLANKTON (% TOTAL) #1 | NO SAMPLE COLLECTED | CERATIUM 40% | |
| #2 | | DINOBRYON 40% | |
| #3 | | | |
| PHYTOPLANKTON ABUNDANCE (cells/mL) | | 725.0 | |
| CHLOROPHYLL-A (Jg/L) | | 9.78 | |
| DOM. ZOOPLANKTON (% TOTAL) #1 | NO SAMPLE COLLECTED | COLOTHECA 42% | |
| #2 | | KERATELLA 37% | |
| #3 | | | |
| ROTIFERS/LITER | | 523 | |
| MICROCRUSTACEA/LITER | | 65 | |
| ZOOPLANKTON ABUNDANCE (#/L) | | 592 | |
| VASCULAR PLANT ABUNDANCE | | Common | |
| SECCHI DISK TRANSPARENCY (m) | | 4.5 | |
| BOTTOM DISSOLVED OXYGEN (mg/L) | 8.4 | 0.3 | |
| BACTERIA (fecal col., #/100 ml) #1 | | < 10 | |
| #2 | , | 10 | |
| #3 | | 10 | |

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 4.6 Hypolimnian valume (m³): 8000

| HEMICAL: | Lake: ROCK POND Town: WINDHAM | | | | |
|--------------------------|----------------------------------|-------|----------------|-------|--------|
| | 24 February 1988 | | 18 August 1987 | | 37 |
| DEPTH (m) | 2.0 | 5.0 | 2.0 | 5.0 | 7.0 |
| pH (units) | 6.4 | 6.3 | 7.1 | 6.8 | 6.4 |
| A.N.C. (Alkalinity) | 9.7 | 9.9 | 9.8 | 9.3 | 11.1 |
| NITRATE NITROGEN | 0.07 | 0.08 | < 0.05 | | < 0.05 |
| TOTAL KJELDAHL NITROGEN | 0.40 | 0.14 | 0.44 | 0.44 | 0.61 |
| TOTAL PHOSPHORUS | 0.003 | 0.002 | | 0.017 | 0.027 |
| CONDUCTIVITY (p mhos/cm) | 94.8 | 104.7 | 89.3 | 83.9 | 80.0 |
| APPARENT COLOR (cpu) | 11 | 12 | 17 | 24 | 23 |
| MAGNESIUM | | | 1.05 | | |
| CALCIUM | | | 4.9 | | |
| SODIUM | | | 9.1 | | |
| POTASSIUM | | | 1.50 | | |
| CHLORIDE | 14 | 16 | 13 | | 12 |
| SULFATE | 9 | 10 | 8 | | 8 |
| TN : TP | 157 | 110 | | | 23 |
| CALCITE SATURATION INDEX | | | 2.5 | | |

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1987

| D.O. | S.D. | PLANT | CHL | TOTAL | CLASS |
|------|------|-------|-----|-------|-------|
| 5 | 1 | 2 | 1 | 9 | Meso. |

COMMENTS:

- 1. Rock Pond was previously surveyed and classified in 1978. A deeper spot was sampled in 1987; thermal stratification and dissolved oxygen depletion were present. Neither were present at the shallower depth in 1978, which is understandable. The dissolved oxygen depletion, which was probably present in 1978 but not sampled, moved the pond from an oligotrophic to a mesotrophic rating. Other trophic criteria remained the same except chlorophyll, which more than doubled.
- 2. The whole-water phytoplankton was dominated by greens (35%) and diatoms (35%). Tiny green flagellates (30%) and <u>Rhizosolenia</u> (25%) were the dominant genera.
- 3. No winter plankton samples were collected.

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FIELD DATA SHEET

LAKE: ROCK POND
DATE: 08/18/87
TOWN: WINDHAM
WEATHER: CLEAR, WINDY

| DATE: CONTONON WEATHER: CLEAR, WINDS | | | | | |
|--------------------------------------|--------------|----------------------|----------------------|--|--|
| DEPTH (M) | TEMP (°C) | *DISSOLVED OXYGEN | OXYGEN SATURATION | | |
| 0.1 | 27.8 | 8.1 | 101 % | | |
| 1.0 | 27.5 | 8.0 | 100 % | | |
| 2.0 | 26.0 | 8.5 | 104 % | | |
| 3.0 | 25.0 | 8.6 | 103 % | | |
| 4.0 | 22.0 | 9.4 | 107 % | | |
| 5.0 | 16.5 | 5.1 | 52 % | | |
| 5.5 | 14.7 | 1.5 | 14 % | | |
| 6.0 | 12.4 | 0.3 | 3 % | | |
| 7.0 | 10.1 | 0.2 | 2 % | | |
| 7.5 | 10.0 | 0.3 | 3 % | | |
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SECCHI DISK (m): 4.5 COMMENTS:

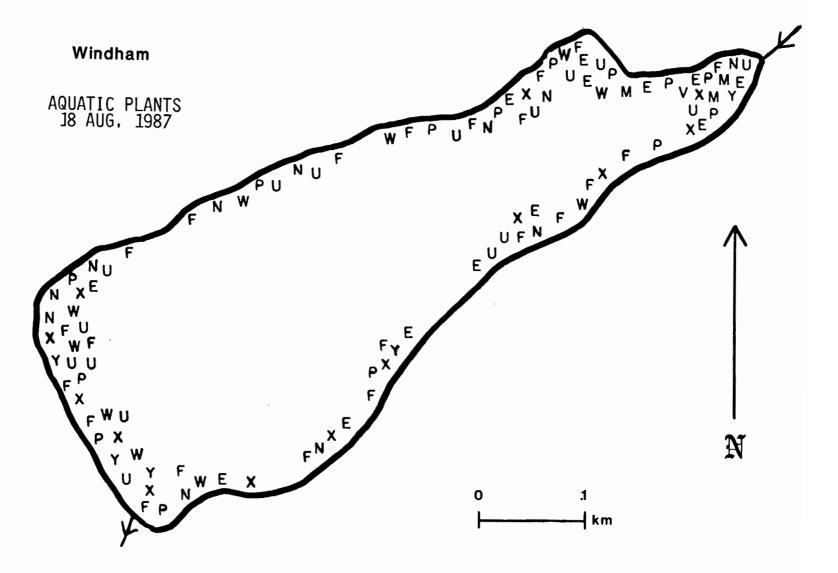
BOTTOM DEPTH (m): 8.2

Anchor did not reach bottom; boat drifted

some while measuring profile.

TIME: 1230

*Dissolved oxygen values are in mg/L



250

AQUATIC PLANT SURVEY LAKE: ROCK POND TOWN: WINDHAM DATE: 08/18/87 PLANT NAME Keyl ABUNDANCE GENERIC COMMON Eriocaulon septangulare Pipewort Common Υ Nuphar Yellow water lily Sparse Nymphoides cordatum Floating heart Common Pontederia cordata Pickerelweed Scattered Х Sterile thread-like leaf Scattered Ν Nymphaea White water lily Common U Utricularia Bladderwort Common Μ Myriophyllum Water milfoil Scattered Potamogeton Pondweed Scattered f Chlorophyceae Filamentous green algae Sparse Vallisneria americana Tape grass Sparse OVERALL ABUNDANCE: Common **GENERAL OBSERVATIONS:**